GENERAL CONTRACTORS

THE MURPHY CONSTRUCTION CO.
EST. 1921 WEST PALM BEACH

OFFICE ADDRESS:
1615 CLARE AVENUE
WEST PALM BEACH
FLORIDA 33401

TELEPHONE (561) 655-3634
FACSIMILE (561) 655-3674

MAILING ADDRESS:
P.O. BOX 3768
WEST PALM BEACH
FLORIDA 33402

DEPARTMENT OF THE ARMY
Jacksonville District Corp of Engineers
P.O. Box 4970
Jacksonville, FL 32232

January 9, 2008

Attn: Marie G. Burns, Acting Chief, Planning Division

Re: Lake Worth Inlet/Palm Beach Harbor Feasibility Study NEPA Documents

Dear Sir:

I am writing you as directed from 6th of December 2007 notice. As an adjacent property owner, located North of The Port of Palm Beach, I object to your Plan (Figure 1, [specifically Area E] – Expansion Alternatives Proposed for Lake Worth Inlet (Palm Beach Harbor) as presented. I am concerned that our upland interests and waterfront improvements which date back to the early 1940's are being proposed for impairment by this process.

In conclusion, I ask that 'Area E' be removed from the Environmental Impact Statement for the Expansion of Lake Worth Inlet (Palm Beach Harbor), FL Draft Environmental Impact Statement (EIS). Further, I wish to be copied on any government or private party correspondence or documents related to the above during this entire EIS process

Sincerely,
THE MURPHY CONSTRUCTION CO..

By: _____
Martin E. Murphy
Vice President

cc: ● Rick MacMillian, Jacksonville District, Project Manager
Lori Baer, Executive Director, Port of Palm Beach

Florida Fish and Wildlife Conservation Commission

Commissioners
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Miami
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Victor J. Heller
Assistant Executive Director
Karen Ventimiglia
Deputy Chief of Staff

Office of Policy and Stakeholder Coordination
Mary Ann Poole
Director
(850) 410-5272
(850) 922-5679 FAX

Managing fish and wildlife resources for their long-term well-being and the benefit of people.

620 South Meridian Street
Tallahassee, Florida
32399-1600
Voice: (850) 488-4676
Hearing/speech impaired:
(800) 955-8771 (T)
(800) 955-8770 (V)
MyFWC.com

January 10, 2008

Ms. Lauren Milligan
Florida Department of Environmental Protection
Florida State Clearinghouse
3900 Commonwealth Boulevard, MS-47
Tallahassee, FL 32399-3000

Re: Palm Beach County, SAI #FL200712103896C, Notice of Intent to prepare a Draft Environmental Impact Statement for expansion of Lake Worth Inlet (Palm Beach Harbor) including widening and deepening of the existing channels and turning basin

Dear Ms. Milligan:

The Florida Fish and Wildlife Conservation Commission's (FWC) Aquatic Habitat Conservation and Restoration Section has coordinated a preliminary agency review of the potential wildlife and wildlife habitat issues associated with the expansion of Lake Worth Inlet (Palm Beach Harbor), Florida. This letter outlines the anticipated concerns and comments related to the feasibility study and proposed Draft Environmental Impact Statement.

Background

The U.S. Army Corps of Engineers (USACE) is performing a feasibility study for the expansion of Lake Worth Inlet (Palm Beach Harbor). The expansion alternatives being reviewed include no action, creation of channel flares, channel deepening and widening, and turning basin expansion. Options for the disposal of dredged material include Peanut Island, disposal in the Palm Beach Harbor Ocean Dredged Material Disposal Site, beach placement, disposal of suitable rock at existing artificial reef sites, and any other viable disposal options that may become available. The USACE intends to prepare a Draft Environmental Impact Statement for this project. The Port of Palm Beach District is the cooperating agency and non-federal sponsor for this project and will provide information and assistance on the resource assessment and mitigation measures and alternatives.

Wildlife

Marine Turtles: The coastal beaches both north and south of Lake Worth Inlet provide nesting habitat for the loggerhead (*Caretta caretta* - threatened), leatherback (*Dermochelys coriacea* - endangered), and the green sea turtle (*Chelonia mydas* - endangered). Construction activities associated with sand placement on these beaches during the marine turtle nesting season (March 1 through October 31) could adversely affect nesting turtles, incubating nests, and emergent hatchlings. The compatibility of sand placed on the nesting beach may also adversely affect the ability of nesting females to construct viable nests and the incubation environment necessary for successful development and escape of marine turtle hatchlings.

Nearshore hardbottom communities and artificial reefs provide foraging, resting and juvenile developmental habitat that could be adversely affected by the expansion of channels associated with this project. Blasting to remove limestone during deepening or widening of channels could be lethal to marine turtles and manatees if it occurs relatively close to individual animals.

Manatees: The Florida Power & Light Riviera Beach power plant located immediately south of the port provides an important winter warm-water refuge for the Florida manatee (*Trichechus manatus latirostris* - endangered). During winter cold fronts, over 400 manatees have been documented using this warm-water refuge. The desired turning basin expansion would encompass the area adjoining this warm-water habitat. Construction activities may directly affect manatees using this site if work is conducted during the cold season (November 15 through March 31), or indirectly by creating a deterrence to the use of this important habitat.

Secondary adverse affects could include altering the nature of the warm-water refuge. Substantially deepening the bathymetry adjacent to the warm-water refuge could result in reduction of warm-water habitat due to an increase of the mixing between the cooler water from the expanded turning basin with the thermal outfall of the power plant. Expansion of the turning basin is also expected to affect seagrass resources that provide forage for manatees. Increased shipping traffic may also increase the risk to manatees due to its proximity to the warm-water refuge and to the travel corridors used to access foraging areas located north of the port.

Habitat

Corals and Hardbottom: Hard corals may be found within the inlet channel and the area marked as "south channel flare" and "north channel flare" on the map provided by the USACE labeled "Study Areas for Potential Improvements (Widening and Deepening)." In addition, the nearshore areas that may be affected by this project fall within the range of staghorn coral (*Acropora cervicornis*), which was recently listed federally as a threatened species. Other hardbottom resources occur on the walls of the existing channel and potentially in the nearshore channel expansion areas. The primary benthic resources expected to be found within the prospective expansion areas include live bottom (soft corals and sponges), solution holes, limestone ledges, and their associated communities.

Potential adverse effects to these benthic resources could result due to dredging, blasting, and sediment disposal. Expansion of the offshore disposal area may also affect hardbottom resources, which will need to be considered if this option is explored.

Seagrass: Six species of seagrass have been documented in Lake Worth Lagoon and all could be affected by the dredging necessary to expand the inlet channel and turning basin. Seagrass species found in Lake Worth Lagoon include turtle grass (*Thalassia testudinum*), manatee grass (*Syringodium filiforme*), shoal grass (*Halodule wrightii*), star grass (*Halophila engelmannii*), paddle grass (*Halophila decipiens*) and the threatened species Johnson's seagrass (*Halophila johnsonii*). Seagrasses provide important ecological functions to estuarine and marine coastal systems. A wide range

of organisms are directly or indirectly dependent upon seagrasses for food and habitat (Zieman and Zieman1989), including several federally and state-listed endangered species such as green sea turtle and Florida manatee.

Seagrasses, coral, and hardbottom also provide essential fisheries habitat by creating a physically stable refuge and nursery ground for numerous commercially and recreationally viable fish and invertebrates (Zieman 1982, Phillips and Meñez 1988, Fonseca et al. 1988).

Artificial Reefs

Any dredged material that would be considered for disposal at an artificial reef site will need to meet appropriate criteria for artificial reef construction depending upon the proposed deployment location and material types. No silt, sand, clay (of any type), or rock boulders less than 150 pounds each will be allowed to be deployed in the artificial reef site. Ideally, the minimum acceptable weight of each individual piece of rock proposed for artificial reef deployment should weigh at least 500 pounds. Close coordination with the FWC Artificial Reef Program (Attn: Jon Dodrill, FWC-Division of Marine Fisheries Management) and Palm Beach County Artificial Reef Coordinator (Dr. Janet Phipps) will be required if artificial reefing is considered as a disposal option.

Peanut Island

Peanut Island contains a large habitat enhancement project that includes a 7.1-acre maritime hammock, 3 acres of mangroves, 1.5 acres of tidal channels and ponds, 3 acres of shallow-water lagoons and 1.3 acres of shallow-water reef. All of these habitat features provide habitat for a variety of wildlife including shorebirds, fish, crustaceans, and mollusks. Placing spoil on the island and widening the channel in segments C, D and E could adversely affect these habitats.

Resource Surveys

We recommend that multiple resource surveys be conducted as well as a review of historical data in order to evaluate the potential affects of this project on the wildlife and marine habitats that are present within the scope of the project. The draft Environmental Impact Statement should include the results of seagrass surveys within the project boundary areas of Lake Worth Lagoon and the inlet, as well as the results of surveys of hardbottom and coral surveys within the inlet channel and the inlet flares, with special attention paid to the finding of any staghorn coral. We offer our expertise and assistance in developing the protocols for the resource surveys due to their importance in the determination process of the feasibility of the options suggested in this scoping effort.

Summary

Expansion of the Lake Worth inlet channel and turning basin has the potential to adversely affect numerous wildlife and habitat resources of the state of Florida. Many difficult environmental hurdles would need to be overcome for the full extent of this project to come to fruition. We recommend that the USACE and the Port of Palm Beach give great consideration to the natural resources that would be affected

during a project of this nature when assessing the information and determining the feasibility of the expansion options.

We appreciate the opportunity to provide input during the scoping process for the Navigation Feasibility Study for the expansion of the existing channels and turning basin of Lake Worth Inlet (Palm Beach Harbor). Please continue to notify Ron Mezich of all future meetings, information exchanges, and requests for comments regarding this potential project. Should you require additional assistance regarding our comments, please contact him at (850) 922-4330 or at ron.mezich@myfwc.com.

Sincerely,

Mary Ann Poole

Mary Ann Poole, Director
Office of Policy and Stakeholder Coordination

map/rrm
Lake Worth Inlet 1182
ENV 1-3-2
cc: K. Cairns, USFWS, Vero Beach
J. Valade, USFWS, Jacksonville
J. Karasia, NMFS, Miami
P. Davis, PBC-DERM, West Palm Beach

Literature Cited

Fonseca, M.S., W.J. Kenworthy, and G.W. Thayer. 1998. Guidelines for the conservation and restoration of seagrasses in the United States and adjacent waters. National Oceanic and Atmospheric Administration, Coastal Ocean Program Decision Analysis Series No. 12, NOAA Coastal Ocean Office, Silver Spring, MD. pp. 1-222.

Phillips, R.C., and E.G. Menez. 1988. Seagrassses. Smithsonian Institution Press. Smithsonian Contributions to the Marine Sciences. Number 34, pp. 1-104.

Zieman, J.C. 1982. The ecology of the seagrasses of south Florida: A Community Profile. U.S.Fish and Wildlife Service., Office of Biological Services, Washington, D.C. FWS/OBS-82/25, 158pp. (Human Impacts p.84-90).

Zieman, J.C., and R.T. Zieman. 1989. The ecology of the seagrass meadows of the west coast of Florida: a community profile. U.S. Fish and Wildlife Service, Biological Report 85 (7.25). Washington, D.C.

Project Information	
Project:	FL200712103896C
Comments Due:	01/11/2008
Letter Due:	01/21/2008
Description:	DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT CORPS OF ENGINEERS - SCOPING NOTICE - DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR EXPANSION OF LAKE WORTH INLET (PALM BEACH HARBOR) - PALM BEACH COUNTY, FLORIDA.
Keywords:	ACOE - SCOPING - EXPAND LAKE WORTH INLET/PALM BEACH HARBOR - PALM BEACH CO.
CFDA #:	12.107

Agency Comments:

TREASURE COAST RPC - TREASURE COAST REGIONAL PLANNING COUNCIL

The proposed study is not in conflict or inconsistent with the Strategic Regional Policy Plan. It furthers Regional Goal 7.1 that calls for a balanced and integrated transportation system.

PALM BEACH -

COMMUNITY AFFAIRS - FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS

FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

The FWC has provided a number of comments regarding the potential direct and secondary impacts of: 1) beach sand placement activities during the marine turtle nesting season (March 1 through October 31) on sea turtle nesting, nests and emergent hatchlings; 2) turning basin expansion and subsequent alteration of the warm-water refuge utilized by manatees at the Florida Power & Light Riviera Beach power plant south of the port; 3) dredging, blasting and sediment disposal activities within the turning basin, inlet channel and channel flares on seagrass, corals and hardbottom resources; and 4) Peanut Island dredged material placement on wildlife habitat. FWC staff advises that dredged material considered for disposal at artificial reef sites must meet appropriate criteria for artificial reef construction. Staff also recommends that project managers conduct multiple resource surveys and review historical data to evaluate the potential effects of the project on wildlife and marine habitats. Please refer to the enclosed FWC letter for additional detailed comments and recommendations.

STATE - FLORIDA DEPARTMENT OF STATE

No Comments Received

ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

The DEP Bureau of Beaches and Coastal Systems notes that a Joint Coastal Permit (JCP) will be required for the proposed project and offers comments on the potential effects of the project on: the existing sand transfer plant at the inlet, Peanut Island and other proposed upland disposal sites, seagrass beds around Peanut Island, the FP&L plant warm-water manatee refuge and current inlet hydraulics. Continued coordination with the DEP Bureau of Beaches and Coastal Systems and FWC to facilitate resolution of project design, sediment management, protected species monitoring and resource impact minimization and mitigation issues is strongly advised. Please contact Ms. Roxane Dow at (850) 922-7852 for further information and assistance.

SOUTH FLORIDA WMD - SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Released Without Comment

For more information or to submit comments, please contact the Clearinghouse Office at:

3900 COMMONWEALTH BOULEVARD, M.S. 47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161

1-12-08

Ms C. L. Brooks
Planning Division
Dept of the Army
P.O Box 4970
Jacksonville, Fl. 32232-0019

Re: Port Channel. Palm Beach county Widening

I am sending our comments regarding the above Subject.
Our option is to take No action on the widening!
This Widening, if implemented, will be the demise of the Manatee. Grass Beds will be impacted along with the reefs. Peanut Island has just been restored, and certainly will be impacted.
We don't Need larger vessels here. just because the cargo client is losing business!

Sincerely,
Stella Rossi
Coalition for Wilderness Islands
Founded 1982

625 Whispering Pines Rd
Boynton Bch Fl. 33435

PURPOSE: SCOPING MEETING - Environmental Impact Statement for Palm Beach Harbor, Feasibility Study of Navigation Improvements
DATE: 9 January 2008
LOCATION: Riviera Beach, FLORIDA (Port of Palm Beach)

REID HANSEN
NAME AND TITLE (PLEASE PRINT)

Myself
BUSINESS OR ORGANIZATION YOU REPRESENT

131 DATE PALM DR
MAILING ADDRESS

LAKE PARK, FL 33403
CITY, STATE, ZIP CODE

captainhansen@yahoo.com
EMAIL ADDRESS

Mail Your Comments to:

U.S. Army Corps of Engineers
Attention: PD-EC
P.O. Box 4970
Jacksonville, Florida 32202-4412

YOUR COMMENTS OR NOTES BELOW:

see typed sheet attached

PRIVACY ACT STATEMENT

AUTHORITY: 42 USC 4321, 4331-4335
PRINCIPAL PURPOSES: Information on this card is used for organization and conduct of this meeting. It may be added to the mailing list for notification of future meetings on the topic and for addressing correspondence subsequent to the meeting.
ROUTINE USES: This information is a public record and may be disclosed to other Federal or local agencies for governmental purposes as well as to private individuals and organizations under the Freedom of Information Act.
MANDATORY OR VOLUNTARY DISCLOSURE: Completion of this card is voluntary. However, failure to supply the information requested may result in your (or your agency's) omission from further notification regarding participation in the process.

BY JAN 22

January 18, 2008

When determining whether or not the Port of Palm Beach should be revitalized with widening, deepening, and any expansion in general, there are many considerations that must be taken into account. However, the affect on the greater good, or, the big picture, is most important. It is Lake Worth Inlet itself that has provided the surrounding areas and people with economy, employment, and recreation. People in protest seem to forget this. Ports are highly valued economic hubs for shipping and trade and therefore extremely important to not only local economies, but the state and national economy as well. The opinions of the protesting multi-millionaires on Palm Beach, who are worried about their view and width of their private beaches, have no merit. The greater good for the economy, while taking safety and/or any fragile environmental issues into consideration is of the utmost importance in this matter.

RH

Reid Hansen
Palm Beach Pilots

Florida Department of Environmental Protection

Coral Reef Conservation Program
1277 NE 79th Street Causeway
Miami, Florida 33138

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

RECEIVED
JAN 22 2008

January 18, 2008

Ms. Catherine L. Brooks
U.S. Army Corps of Engineers
Jacksonville District, Planning Division
Environmental Section, P.O. Box 4970
Jacksonville, FL 32207

RE: Notice of Intent to Prepare a Draft Environmental Impact Statement for Expansion of Lake Worth Inlet (Palm Beach Harbor), FL

Dear Ms. Brooks:

The Florida Department of Environmental Protection (FDEP) Coral Reef Conservation Program (CRCP) has reviewed the above-referenced Notice of Intent and the information presented by the U.S. Army Corps of Engineers (USACE) and its contractors at the public and agency scoping meeting held at the Port of Palm Beach on 9 January 2008. The FDEP-CRCP recognizes the importance addressing navigational safety issues and maintaining infrastructure necessary to support the economy of the State of Florida, when conducted in accordance with management practices that are appropriate for the exceptional natural resources in the proposed project area. Our environmental concerns, comments and recommendations are provided below to support the development of a comprehensive Feasibility Study and Draft Environmental Impact Statement by USACE for the proposed Lake Worth Inlet project.

Project Need/Justification

The FDEP-CRCP understands the navigational safety issues associated with shoaling which has reduced the authorized depth of the Lake Worth Inlet channel from 33' to 29', and that a project to conduct channel depth maintenance may be necessary. However, the need for the proposed Lake Worth Inlet expansion project, including widening and deepening of existing channels and turning basins, has not been demonstrated. Adjacent ports, at Port Everglades and the Port of Miami, are currently planning or preparing (respectively) to undergo major expansion projects, and therefore, an additional expansion project for the Port of Palm Beach may not be necessary or appropriate. The need for these three, or even two of these, ports within the 83-mile distance from the Port of Miami to the Port of Palm Beach to accommodate larger, deeper-draft vessels must be evaluated as a fundamental component of the economic analysis prepared for the feasibility study for this proposed project.

The economic analysis must also address the exceptional natural resources in the proposed project area, including their economic value and the economic losses associated with impacts to these natural resources. For, example, a study by Johns et al. (2001) concluded that the reef resources in Palm Beach County generate $699 million dollars in annual sales and income, and support 6300 jobs in the County. The economic value of reef resources in Miami-Dade and Broward counties is even greater. Due to the presence and economic importance of the extensive nearshore and offshore sensitive coral reef communities, endangered species, seagrasses, and other sensitive marine habitats and animals which lie within the footprint and surrounding area of the proposed project, the FDEP-CRCP strongly encourages consideration of alternative port expansion project locations in the feasibility study, where the potential impacts to valuable natural resources and the multi-decadal timescales required for resource recovery are fewer than in southeast Florida. FDEP-CRCP also notes that the intrinsic value of these natural resources to the citizens and businesses of Palm Beach County is exceptionally high, as demonstrated by local community members who voiced opposition to the proposed project during the public comment period of the recent scoping meeting.

Offshore Hardbottom and Coral Reefs

The proposed Lake Worth Inlet channel and flare expansion would directly impact hardbottom and coral reef communities. As cited above, in addition to supporting a diverse assortment of marine life, hardbottom communities and coral reefs drive an important economic engine in southeast Florida. These reefs support a thriving and economically indispensable tourism industry, as well as recreational and commercial fisheries, and provide shoreline protection. Dredging activities pose significant risks and may cause irreversible harm to hardbottom communities from potential increased turbidity and direct impacts from dredging equipment. Mitigation using artificial reefs can never fully replace a natural reef community. Further, the cost and challenges of providing mitigation at scales which attempt to compensate for the loss of ecological services following project construction may be greater than the economic benefits derived from project construction.

Nearshore Hardbottom and Seagrass Communities

The ecological relationship between seagrasses and coral reefs is inseparable and irreplaceable. Impacts to either community carry severe repercussions to both, including loss of critical habitat, fisheries stock, and primary productivity. Hardbottom and seagrass communities provide important habitat to numerous adult and juvenile fishes and foraging and resting grounds for sea turtles. Of particular note, the Lake Worth Inlet is known to be one of the largest of the few remaining snook spawning sites on the Atlantic Coast. Burial or dredging of nearshore hardbottom and seagrass communities will result in loss of habitat, biodiversity, foraging grounds, and natural shoreline stabilization and protection. Mitigation for hardbottom and seagrass communities cannot avoid or replace the associated organismal and biodiversity losses.

The proposed channel and turning basin expansion and anticipated increase in subsequent beach nourishment (due to increased post-project construction erosion) will directly and permanently impact these important nearshore habitats through direct habitat destruction (i.e. removal by dredging), and burial of the hardbottom by smothering the associated algal, sponge, coral and worm reef communities from sand placement and offshore sand migration after placement.

Nearshore and Offshore Softbottom/ Sandy Habitat

It is also important to note that sandy and softbottom seafloors, bays and lagoons provide an important, unique, but often overlooked habitat for numerous meiofauna –organisms that live and move among the grains of sand – as well as other marine fauna which bury themselves (e.g. flat fishes, stingrays), live in burrows in the sand (e.g. burrowing anemones, molluscs), or forage for food in softbottoms (numerous fishes, invertebrates and marine mammals). Blasting and dredging activities and offshore migration of sand placed on the beach can displace and/or destroy many of these fauna, and should be avoided or minimized. Destruction of this habitat may cause significant ecological repercussions.

Study Design

At the scoping meeting, USACE representatives stated that funding has been received, and the firm PBS&J has been contracted, by USACE to comprehensively survey the aquatic resources which will be impacted by the proposed project. However, the sampling design presented by Don Deis of PBS&J is inadequate to address the (1) extent and nature of potential project impacts, (2) options for minimization of impacts, and (3) the amount and appropriate mitigation required to compensate for resources destroyed by the construction of the proposed project, should it be approved. Of particular concern, we note that the surveys of the potential project impact areas A1 and A2, as well as the channel floor (project area B), and channel walls (project areas B1 & B2) are limited to towed video sampling. This methodology by itself is insufficient to address questions which must be answered by the survey. Diver surveys, both inside and adjacent to the proposed impact areas, incorporating an appropriate suite of sampling methodologies and replication must be performed to provide the ecological data necessary to fully evaluate the proposed environmental impacts associated with this project. FDEP-CRCP would be pleased to work with USACE and PBS&J to develop a comprehensive survey protocol, and would appreciate the opportunity to review and recommend specific modifications to the survey protocol in advance of the actual survey period.

For example, FDEP-CRCP encourages USACE and PBS&J to incorporate an active and directed *Acropora* spp. (Elkhorn and Staghorn coral) search into its survey protocol. We define an active search as surveying an area while specifically seeking to locate and enumerate target species. In light of the recent designation of these two coral species as Threatened under the U.S. Endangered Species Act, and the documented evidence that reefs throughout southeast Florida historically and currently provide suitable habitat for these threatened species, it would be a

gross oversight to exclude an active search for these species in the study design and report. Other factors, such as the classification of stony coral, octocorals and barrel sponge size classes also need to be considered.

The total potential area of impact is not clear. The total areas should include identification and percent cover of marine resources (in hectares and acres) defined as "live cover" (i.e. scleractinians, hydrocorals, octocorals, sponges, turf algae and macroalgae) including the natural areas of sand and uncolonized hardbottom which normally occur on reefs in southeast Florida. These areas need to be surveyed and mapped in detail to determine the extent of marine resources they include, and the total area of potential impact should include and evaluation of these areas. The study should also provide information on the impact to the nearshore and offshore softbottom or sandy habitat. Finally, the total anticipated area of both direct impacts and indirect impacts from the expansion of the Port of Palm Beach must be clearly defined.

Beach Erosion

FDEP-CRCP has concerns regarding the beach erosion and associated consequences that may result from construction of this project, including but not limited to:

- Impacts to nearshore and hardbottom resources.
- Sediment and turbidity associated with project construction methods (e.g. an inadequate buffer zone of 150ft has been proposed for this project).
- No accounting for potential impacts beyond the buffer zone.
- Subsequent need to re-nourish affected beaches which will exacerbate impacts to nearshore and hardbottom resources.
- Lack of suitable beach nourishment sand sources compatible in both grain size and composition.

In addition to the concerns addressed above, recreational activities including swimming, snorkeling, diving, and fishing may also be adversely affected by the proposed Lake Worth Inlet expansion project, and anticipated subsequent increased frequency of beach nourishment projects, due to increased turbidity and loss of habitat and biodiversity. Increased environmental pollution, road traffic, development, and infrastructure necessary to support increased maritime activity and port commerce must be considered and will impact the surrounding residential communities, as well as the greater south Florida area. Construction of this project may result in substantial, irreplaceable, and potentially unnecessary losses to the State of Florida.

The FDEP Coral Reef Conservation Program recommends that alternative ports in the State of Florida be thoroughly investigated for their potential to accommodate deeper draft vessels and increased maritime activity, in lieu of the ports in southeast Florida (e.g. Port of Palm Beach and Port Everglades). The extent of potential marine resource and associated environmental impacts from newly proposed channel deepening and widening (if needed) at alternative Ports should be compared to the proposed resource impacts anticipated to result from port expansion projects in

southeast Florida. The FDEP-CRCP requests full consideration of all potential methods and alternatives which address the stated No Action alternative for this project. As further information about this project is made available by USACE, we anticipate providing additional comments and recommendations.

Please copy me on any further activities and communications regarding this proposed project at Chantal.Collier@dep.state.fl.us.

Sincerely,

Chantal Collier

Chantal Collier
Coral Reef Program Manager
Office of Coastal and Aquatic Managed Areas
Florida Department of Environmental Protection

cc via e-mail:
Stephanie Bailenson, FDEP-CAMA
Dan Bates, Palm Beach County ERM
Marie Burns, USACE
Paul Davis, Palm Beach County ERM
Lisa Gregg, FWC
Jocelyn Karazsia, NOAA-NMFS
Vladimir Kosmynin, FDEP-BBCS
Audra Livergood, NOAA-NMFS
Stephen MacLeod, FDEP-BBCS
Ellen McCarron, FDEP-CAMA
Erin McDevitt, FWC
Janet Phipps, Palm Beach County ERM
Joanna Walczak, FDEP-CRCP

Literature Cited:

Johns GM, Leeworthy VR, Bell FW, Bonn MA (2001) Socioeconomic Study of Reefs in Southeast Florida. Final Report. Hazen and Sawyer Environmental Engineers & Scientists

Powell

Department of Environmental Resources Management
2300 North Jog Road, 4th Floor
West Palm Beach, FL 33411-2743
(561) 233-2400
FAX: (561) 233-2414
www.co.palm-beach.fl.us/erm

January 22, 2008

Ms. Marie Burns, Acting Chief
Planning Division (PD-EC)
US Army Corps of Engineers
PO Box 4970
Jacksonville, Florida 32202-4412

SUBJECT: PALM BEACH HARBOR EIS/FEASIBILITY STUDY

Dear Ms. Burns:

The Department of Environmental Resources Management (ERM) has conducted a preliminary review of the issues associated with the proposed expansion of Palm Beach Harbor and Lake Worth Inlet. While the Port has been working closely with Palm Beach County to improve the management of the inlet and Peanut Island, the proposed project will have major environmental impacts that need to be addressed in the Feasibility Study and Environmental Impact Statement. Palm Beach County has agreed to support this study to get a better understanding of project alternatives and their impacts.

PROPOSED WORK

The study will evaluate options for widening and deepening the Lake Worth Inlet and expanding Palm Beach Harbor to improve navigation safety, improve port efficiency and to accommodate larger ships. Potential expansion alternatives include no action, channel deepening, channel widening, addition of channel flares offshore, and expansion of the turning basin to the north and south as outlined on the enclosed map.

HABITAT ISSUES

- One of the primary concerns is that dredging will destroy valuable seagrass, hardbottom and softbottom resources. Depending on the extent of dredging proposed, the potential exists for negative impacts to offshore reefs and the artificial reefs within the channel flare footprint (Study Areas A1 and A2), hardbottom communities on the inlet channel walls (Study Area B), hardbottom and seagrass communities east of Peanut Island (Study Area C), and seagrass communities (Study Areas D, F and G). Additionally, substantial amounts of shallow, productive softbottom supporting a diverse invertebrate community may be eliminated in all study areas.
- Surveys of these habitats that have been performed by ERM are not sufficient to address potential impacts from the proposed work. Detailed resource surveys will need to be conducted to adequately characterize each study area.
- While some of the resources that will be affected have been created by man (artificial reefs, channel walls, hardbottom rubble), these communities have been established for decades. They have been colonized by hard corals, soft corals, and sponges, support recreationally and commercially species (including lobsters), and provide important environmental functions that need to be recognized in the study.
- The seagrass beds within the project limits are some of the most diverse in the county with at least 5 species documented to occur. These beds have additional

significance given the proximity to the manatee aggregation site at the Florida Power and Light (FPL) warm-water discharge.

- Mitigation for seagrass impacts at the scale being considered will have a poor chance of success in Lake Worth Lagoon. The most likely method to mitigate for any seagrass impacts would be to fill large portions of the Lake Worth Lagoon to raise the bottom to the photic zone. The only location near the inlet where mitigation at this scale could be constructed is located about 1 ½ miles south of the inlet. It is unlikely a sufficiently large mitigation project could be constructed here since it is expected to have additional significant impacts to nearby seagrasses, benthic invertebrates, navigation, and flushing of the lagoon. Further, based upon their limited distribution in the lagoon and their light and nutrient requirements, it is highly unlikely that manatee grass (*Syringodium filiforme*) or turtle grass (*Thalassia testudinum*) would grow at this location. For these reasons, every effort should be made to significantly reduce or eliminate seagrass impacts.
- The proposed dredging is in direct conflict with the Lake Worth Lagoon Management Plan which lists seagrass preservation as one of its priority objectives, and the Coastal Management Element (CME) of the Palm Beach County Comprehensive Land Use Plan, which has a goal of preserving and protecting coastal resources.
- Impacts to water quality and the potential for increased flushing in the Lake Worth Lagoon need to be evaluated. While it is likely that increased oceanic water in the lagoon will provide benefits from improved clarity, there will be changes in lagoon salinity that may affect a number of other species that need to be evaluated. It is recommended that predicted changes in salinity in the lagoon be evaluated using an existing model (Zarillo, 2003). Additionally, the potential for increased flushing of nutrient rich lagoon waters onto offshore reefs needs to be considered.

LISTED SPECIES ISSUES

- Manatees are the listed species most affected by this project which is located where the majority of manatees are found in the county. The FPL discharge provides an important warm-water refuge for hundreds of manatees in the winter. Alterations to the basin near the discharge are likely to affect manatees and will be one of the most challenging impacts to offset.
- Sea turtles utilize a number of habitats in the project area including the beaches, reefs, seagrass beds, and inlet jetties. Recent studies conducted by ERM have documented juvenile green turtles utilizing seagrass beds 1 ½ miles north of Palm Beach Inlet and they may be using the beds south of the inlet. Juvenile green and hawksbill turtles utilize nearshore reefs near the inlet. Juvenile green turtles have also been killed during maintenance dredging of the inlet indicating that they may be foraging on algae found on the rocks (similar to those observed in the Trident submarine basin in Port Canaveral and Brazos Santiago Pass in Texas). Four species of sea turtles (loggerhead, green, leatherback, and hawksbill) utilize the nesting beaches adjacent to the inlet and five species (loggerhead, green, leatherback, hawksbill, and Kemp's ridley) occur in the ocean near the inlet.
- Lighting at the Port is currently impacting sea turtles. High mast lighting that has been added during recent Port renovations that increased illumination in the coastal area, has been implicated in sea turtle hatchling disorientation incidents on Palm

Beach Shores, and probably contributes to many other disorientations in the area. Increased cargo traffic will likely mean increased coastal lighting impacts in the cargo handling area. Port lighting should be evaluated during the EIS process to determine methods for achieving sufficient illumination for port operations while minimizing the amount of light trespass off the property.

- Johnson's seagrass (*Halophila johnsonii*) is one of the most commonly occurring seagrasses in Lake Worth Lagoon. Impacts from dredging and sedimentation, as well as alterations to salinity and water clarity will impact this threatened species.
- Whales, including humpback and right whale, have infrequently been observed in the inlet and in adjacent waters.
- The Lake Worth Inlet is one of the most important areas for several species of the Atlantic population of snook (*Centropomus* spp), a species of special concern. Thousands of snook utilize the inlet and nearby structure during summer spawning aggregations and return to this location every year.
- Construction will have to be timed to minimize impacts in the winter to manatees and during the summer to nesting sea turtles and spawning snook. Another consideration in determining timing of construction is that offshore currents tend to be stronger in summer which would increase flushing, dilution and transportation of a turbidity plume.
- The public notice stated that blasting may not be necessary for this project. However, based upon our understanding of the geology, previous dredging at this inlet, and recent dredging in the Port of Miami, we expect that there will strong economic incentive to use blasting. Any consideration for blasting must take into account the impacts to listed species and fishes.

INLET AND BEACH MANAGEMENT ISSUES

- The Lake Worth Inlet is already the primary cause of erosion of downdrift beaches. Any widening and deepening of the inlet and the nearshore will alter the wave climate and littoral sand transport which could increase the loss of sand to the downdrift beaches. Any impacts will require an increase in the amount of sand bypassing and beach nourishment (which can have negative impacts) to compensate. The costs to mitigate for downdrift beach impacts must be clearly and fully defined.
- All beach compatible sand must be placed on the beach. There may be options for disposing of non-beach compatible material in existing dredge holes in Lake Worth Lagoon. Use of the offshore spoil disposal area should be only as a last resort since there are important deep reef habitats downstream from the disposal area. Geotechnical work should be performed as part of this study to adequately characterize the sediments and determine the quantities that will be available for disposal at the different sites.

PORT OPERATIONS

- Expansion of the inlet and turning basin to accommodate larger ships will have secondary impacts that should be addressed in the EIS.
- Concerns have been raised recently about potential damage associated with the existing anchorage area and a study has been initiated to evaluate options for

revising the anchorage area. This issue should be addressed in the EIS since the ships that would be using the anchorage are usually associated with the Port.

- ERM currently uses the lot west of Study Area G as the artificial reef construction staging area. In the event the Port acquires this site for expansion. ERM would like to receive assurances that there will be provisions for such a staging area in future Port plans.

RECREATION ISSUES

- NEPA requires that impacts to recreation be evaluated. The inlet vicinity is heavily used by boaters, fisherman, snorkelers, divers, surfers, and the general public.
- Safety issues will need to be evaluated since larger ships operating close to a popular park (Peanut Island), amidst large numbers of recreational and commercial small craft, and near popular dive sites is likely to increase the chance of accidents.
- Dredging of the channel flare (Study Area A) will affect wave generation that may alter local surf conditions. Given the quality and popularity of the Reef Road and Pump House surf breaks, it is recommended that potential changes to the surf be evaluated.
- Erosion of the southeast corner of Peanut Island has necessitated increasing amounts of armoring to protect recreational amenities. Dredging the channel deeper and closer to the island will allow for increased wave and current energy to alter the shoreline and threaten additional amenities. Those impacts and costs should be evaluated.

BENEFIT/COST

- A key determinant of feasibility is the benefit/cost ratio of each alternative. It is requested that, in addition to construction costs, the true costs to all the resources be included in the analysis. This would include costs for mitigation, monitoring, increased beach and inlet management, and loss of recreation resources.

In summary, a thorough study is necessary to adequately evaluate alternatives. Given the extent of potential impacts, it does not appear that it is possible to construct all components of the project without significant environmental effect. The challenge will be to develop a plan that meets some of the Port's goals while minimizing impacts.

Thank you for the opportunity to provide comments. Please call me at 561-233-2400 or Mr. Paul Davis at 561-233-2509 if you have any questions.

Sincerely,

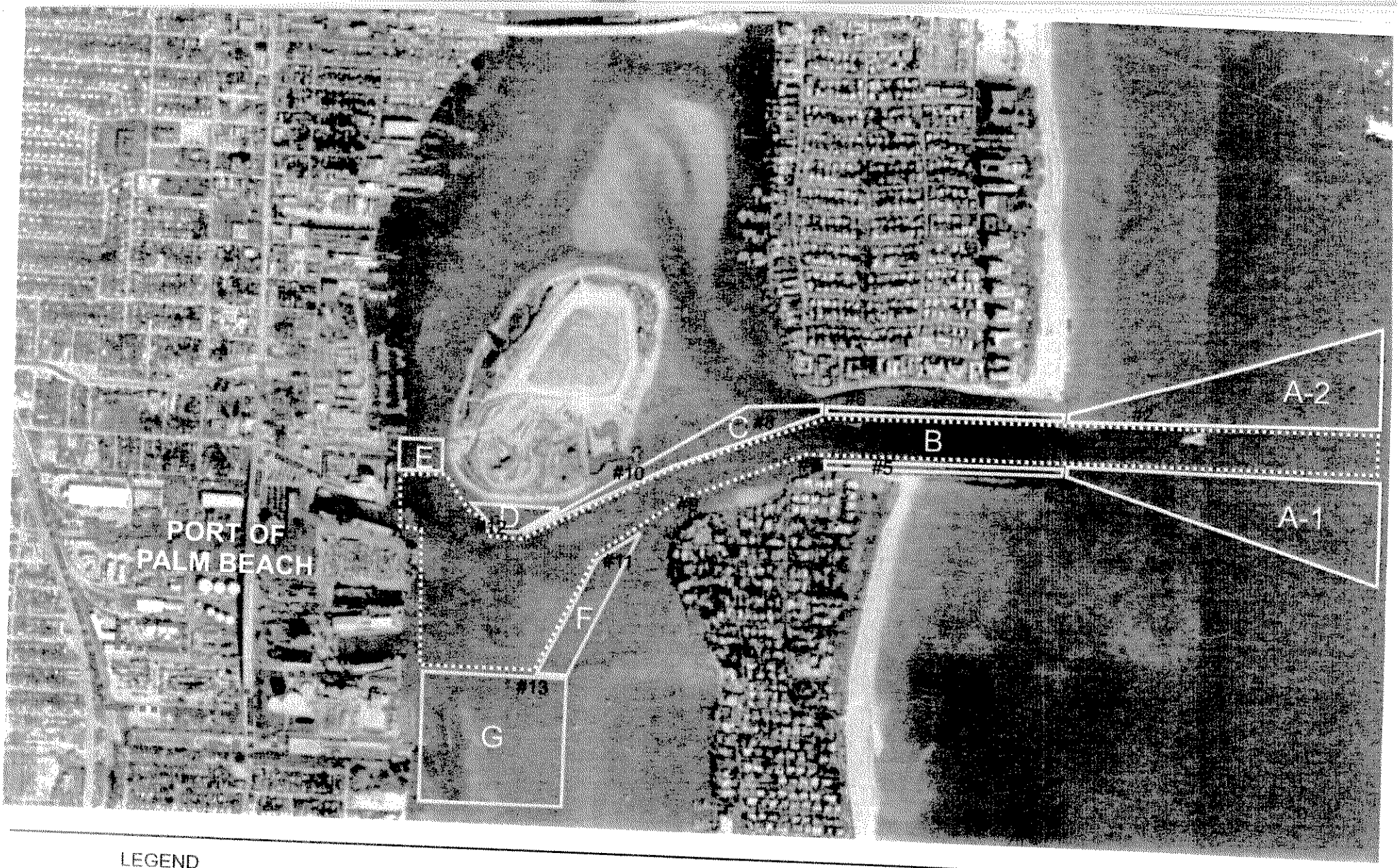
Richard E. Walesky

Richard E. Walesky, Director
Environmental Resources Management

REW:PD:dab

Enclosure

c: (w/ enclosure):
Robert Weisman, County Administrator
Members of the PBC Artificial Reef and Environmental Enhancement Committee
Lori Baer, Director, Port of Palm Beach
Peter Elwell, Town Manager, Town of Palm Beach
Cynthia Lindscoog, Town Administrator, Town of Palm Beach Shores
William Wilkins, City Manager, Riviera Beach
Edward Mitchell, City Administrator, West Palm Beach
Dennis Eshleman, Director, PBC Parks and Recreation
David Roach, Executive Director, FIND



LEGEND

Federal Harbor Project
Potential Improvement Areas

Note: Improvement areas are general study areas only; extensive analysis is required prior to refinement and selection of any expansion alternative.

A-1 - South Channel Flare
A-2 - North Channel Flare
B - Widener inside jetties
C - Widener
D - Peanut Island Widener
E - North Basin Widener
F - Turning Basin Eastern Widener
G - Turning Basin Southern Expansion
1- Channel Marker Number

Palm Beach Harbor/Lake Worth Inlet
Navigation Feasibility Study
Study Areas for Potential Improvements
Port of Palm Beach District

Source: Google Earth; The Four Gates Company, 2007

Florida Department of
Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

January 23, 2008

Ms. Catherine L. Brooks
Jacksonville District, Planning Division
U. S. Army Corps of Engineers
P. O. Box 4970
Jacksonville, FL 32232-0019

RE: Department of the Army, Jacksonville District Corps of Engineers – Scoping Notice Draft Environmental Impact Statement for Expansion of Lake Worth Inlet (Palm Beach Harbor) – Palm Beach County, Florida.
SAI # FL200712103896C

Dear Ms. Brooks:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the above public notice.

The Florida Department of Environmental Protection's (DEP) Bureau of Beaches and Coastal Systems notes that a Joint Coastal Permit (JCP) will be required for the proposed project and offers the following comments:

1) Please be advised that there is an existing sand transfer plant at the inlet. In 1996, the pipe was drilled approximately 15 feet under the existing channel. The costs of redrilling the pipe should be included in the total project costs if the proposed entrance channel depth approaches this pipeline depth.

2) The DEP will consider the effects of dredged material disposal and management on Peanut Island and other upland sites. Any potential discharges from the disposal site (i.e., return water) must be reviewed, along with any construction to increase the capacity of the containment dikes. (If no dike construction is necessary, an engineer's certification of containment dike integrity will still be required.) Impacts of disposal operations on water-dependent bird species must be considered, especially if conducted during nesting season.

3) Continuous seagrass beds border the south turning basin, and seagrasses have also been observed around the south end of Peanut Island. Any expansion within the areas labeled C, D, F and G on Figure 1 of the scoping notice will likely require seagrass mitigation.

4) A Florida Power & Light (FP&L) power plant exists south of the port. Expansion to the south would bring larger ships closer to this warm-water manatee refuge, increasing the risk of primary and secondary impacts.

5) Neither the Lake Worth Inlet Management Plan study by Applied Technology and Management, Inc. (April 1995) nor prior studies by the Jacksonville District Corps of Engineers have obtained any recent inlet hydraulics data, so DEP does not have a complete understanding of this inlet's hydraulics. Changes to the federal navigation project through this inlet propose channel deepening and widening that would affect the inlet's hydraulics. Water quality effects, tidal prismatic modification, and changes to interior waters circulation are among the physical environmental reasons to develop an understanding of the inlet's hydraulics. Physical changes to the inlet's hydraulics may also have biological effects.

   The effect of channel deepening and widening on the sand transfer plant's discharge line and pumping performance should also be evaluated. Although the inlet trap northeast of the inlet should entrap most of the sediment, it is too early to ascertain its success or calculate the amount of sediment that will still be entrapped by the inlet channel. At most other inlets in Florida, channel deepening would have a significant impact on natural sand bypassing.

   DEP staff requests the collection of current inlet hydraulics data to utilize in the evaluation of any proposed modifications.

Continued coordination with the DEP Bureau of Beaches and Coastal Systems and Florida Fish and Wildlife Conservation Commission to facilitate resolution of project design, sediment management, protected species monitoring and resource impact minimization and mitigation issues is strongly advised. Please contact Ms. Roxane Dow at (850) 922-7852 for further information and assistance.

The Florida Fish and Wildlife Conservation Commission (FWC) has provided a number of comments regarding the potential direct and secondary impacts of:

1) Beach sand placement activities during the marine turtle nesting season (March 1 through October 31) on sea turtle nesting, nests and emergent hatchlings;
2) Turning basin expansion and subsequent alteration of the warm-water refuge utilized by manatees at the FP&L Riviera Beach power plant south of the port;

3) Dredging, blasting and sediment disposal activities within the turning basin, inlet channel and channel flares on seagrasses, corals and hardbottom resources; and
4) Peanut Island dredged material placement on wildlife habitat.

FWC staff advises that dredged material considered for disposal at artificial reef sites must meet appropriate criteria for artificial reef construction. Staff also recommends that project managers conduct multiple resource surveys and review historical data to evaluate the potential effects of the project on wildlife and marine habitats. Please refer to the enclosed FWC letter for additional detailed comments and recommendations.

Based on the information contained in the scoping notice and the enclosed state agency comments, the state has determined that, at this stage, the proposed activities are consistent with the Florida Coastal Management Program (FCMP). The concerns identified by our reviewing agencies must be addressed, however, prior to project implementation. The state's continued concurrence with the project will be based, in part, on the adequate resolution of issues identified during this and subsequent reviews. The state's final review of the project's consistency with the FCMP will be conducted during the environmental permitting stage.

Thank you for the opportunity to review the proposed project. Should you have any questions regarding this letter, please contact Ms. Lauren P. Milligan at (850) 245-2170.

Yours sincerely,

Sally B. Mann

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/lm
Enclosures

cc: Roxane Dow, DEP, BBCS
Mary Ann Poole, FWC

Project Information	
Project:	FL200712103896C
Comments Due:	01/11/2008
Letter Due:	01/21/2008
Description:	DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT CORPS OF ENGINEERS - SCOPING NOTICE - DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR EXPANSION OF LAKE WORTH INLET (PALM BEACH HARBOR) - PALM BEACH COUNTY, FLORIDA.
Keywords:	ACOE - SCOPING - EXPAND LAKE WORTH INLET/PALM BEACH HARBOR - PALM BEACH CO.
CFDA #:	12.107

Agency Comments:

TREASURE COAST RPC - TREASURE COAST REGIONAL PLANNING COUNCIL

The proposed study is not in conflict or inconsistent with the Strategic Regional Policy Plan. It furthers Regional Goal 7.1 that calls for a balanced and integrated transportation system.

PALM BEACH -

COMMUNITY AFFAIRS - FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS

FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

The FWC has provided a number of comments regarding the potential direct and secondary impacts of: 1) beach sand placement activities during the marine turtle nesting season (March 1 through October 31) on sea turtle nesting, nests and emergent hatchlings; 2) turning basin expansion and subsequent alteration of the warm-water refuge utilized by manatees at the Florida Power & Light Riviera Beach power plant south of the port; 3) dredging, blasting and sediment disposal activities within the turning basin, inlet channel and channel flares on seagrass, corals and hardbottom resources; and 4) Peanut Island dredged material placement on wildlife habitat. FWC staff advises that dredged material considered for disposal at artificial reef sites must meet appropriate criteria for artificial reef construction. Staff also recommends that project managers conduct multiple resource surveys and review historical data to evaluate the potential effects of the project on wildlife and marine habitats. Please refer to the enclosed FWC letter for additional detailed comments and recommendations.

STATE - FLORIDA DEPARTMENT OF STATE

No Comments Received

ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

The DEP Bureau of Beaches and Coastal Systems notes that a Joint Coastal Permit (JCP) will be required for the proposed project and offers comments on the potential effects of the project on: the existing sand transfer plant at the inlet, Peanut Island and other proposed upland disposal sites, seagrass beds around Peanut Island, the FP&L plant warm-water manatee refuge and current inlet hydraulics. Continued coordination with the DEP Bureau of Beaches and Coastal Systems and FWC to facilitate resolution of project design, sediment management, protected species monitoring and resource impact minimization and mitigation issues is strongly advised. Please contact Ms. Roxane Dow at (850) 922-7852 for further information and assistance.

SOUTH FLORIDA WMD - SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Released Without Comment

For more information or to submit comments, please contact the Clearinghouse Office at:

3900 COMMONWEALTH BOULEVARD, M.S. 47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161

Florida Fish and Wildlife Conservation Commission

Commissioners
Rodney Barreto
Chair
Miami

Brian S. Yablonski
Vice-Chair
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Kathy Barco
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Executive Staff
Kenneth D. Haddad
Executive Director

Victor J. Heller
Assistant Executive Director

Karen Ventimiglia
Deputy Chief of Staff

Office of Policy and Stakeholder Coordination
Mary Ann Poole
Director
(850) 410-5272
(850) 922-5679 FAX

Managing fish and wildlife resources for their long-term well-being and the benefit of people.

620 South Meridian Street
Tallahassee, Florida
32399-1600
Voice: (850) 488-4676

Hearing/speech impaired:
(800) 955-8771 (T)
(800) 955-8770 (V)

MyFWC.com

January 10, 2008

RECEIVED
JAN 14 2008
CIP / CLGA

Ms. Lauren Milligan
Florida Department of Environmental Protection
Florida State Clearinghouse
3900 Commonwealth Boulevard, MS-47
Tallahassee, FL 32399-3000

Re: Palm Beach County, SAI #FL200712103896C, Notice of Intent to prepare a Draft Environmental Impact Statement for expansion of Lake Worth Inlet (Palm Beach Harbor) including widening and deepening of the existing channels and turning basin

Dear Ms. Milligan:

The Florida Fish and Wildlife Conservation Commission's (FWC) Aquatic Habitat Conservation and Restoration Section has coordinated a preliminary agency review of the potential wildlife and wildlife habitat issues associated with the expansion of Lake Worth Inlet (Palm Beach Harbor), Florida. This letter outlines the anticipated concerns and comments related to the feasibility study and proposed Draft Environmental Impact Statement.

Background

The U.S. Army Corps of Engineers (USACE) is performing a feasibility study for the expansion of Lake Worth Inlet (Palm Beach Harbor). The expansion alternatives being reviewed include no action, creation of channel flares, channel deepening and widening, and turning basin expansion. Options for the disposal of dredged material include Peanut Island, disposal in the Palm Beach Harbor Ocean Dredged Material Disposal Site, beach placement, disposal of suitable rock at existing artificial reef sites, and any other viable disposal options that may become available. The USACE intends to prepare a Draft Environmental Impact Statement for this project. The Port of Palm Beach District is the cooperating agency and non-federal sponsor for this project and will provide information and assistance on the resource assessment and mitigation measures and alternatives.

Wildlife

Marine Turtles: The coastal beaches both north and south of Lake Worth Inlet provide nesting habitat for the loggerhead (*Caretta caretta* - threatened), leatherback (*Dermochelys coriacea* - endangered), and the green sea turtle (*Chelonia mydas* - endangered). Construction activities associated with sand placement on these beaches during the marine turtle nesting season (March 1 through October 31) could adversely affect nesting turtles, incubating nests, and emergent hatchlings. The compatibility of sand placed on the nesting beach may also adversely affect the ability of nesting females to construct viable nests and the incubation environment necessary for successful development and escape of marine turtle hatchlings.

Nearshore hardbottom communities and artificial reefs provide foraging, resting and juvenile developmental habitat that could be adversely affected by the expansion of channels associated with this project. Blasting to remove limestone during deepening or widening of channels could be lethal to marine turtles and manatees if it occurs relatively close to individual animals.

Manatees: The Florida Power & Light Riviera Beach power plant located immediately south of the port provides an important winter warm-water refuge for the Florida manatee (*Trichechus manatus latirostris* - endangered). During winter cold fronts, over 400 manatees have been documented using this warm-water refuge. The desired turning basin expansion would encompass the area adjoining this warm-water habitat. Construction activities may directly affect manatees using this site if work is conducted during the cold season (November 15 through March 31), or indirectly by creating a deterrence to the use of this important habitat.

Secondary adverse affects could include altering the nature of the warm-water refuge. Substantially deepening the bathymetry adjacent to the warm-water refuge could result in reduction of warm-water habitat due to an increase of the mixing between the cooler water from the expanded turning basin with the thermal outfall of the power plant. Expansion of the turning basin is also expected to affect seagrass resources that provide forage for manatees. Increased shipping traffic may also increase the risk to manatees due to its proximity to the warm-water refuge and to the travel corridors used to access foraging areas located north of the port.

Habitat

Corals and Hardbottom: Hard corals may be found within the inlet channel and the area marked as "south channel flare" and "north channel flare" on the map provided by the USACE labeled "Study Areas for Potential Improvements (Widening and Deepening)." In addition, the nearshore areas that may be affected by this project fall within the range of staghorn coral (*Acropora cervicornis*), which was recently listed federally as a threatened species. Other hardbottom resources occur on the walls of the existing channel and potentially in the nearshore channel expansion areas. The primary benthic resources expected to be found within the prospective expansion areas include live bottom (soft corals and sponges), solution holes, limestone ledges, and their associated communities.

Potential adverse effects to these benthic resources could result due to dredging, blasting, and sediment disposal. Expansion of the offshore disposal area may also affect hardbottom resources, which will need to be considered if this option is explored.

Seagrass: Six species of seagrass have been documented in Lake Worth Lagoon and all could be affected by the dredging necessary to expand the inlet channel and turning basin. Seagrass species found in Lake Worth Lagoon include turtle grass (*Thalassia testudinum*), manatee grass (*Syringodium filiforme*), shoal grass (*Halodule wrightii*), star grass (*Halophila engelmannii*), paddle grass (*Halophila decipiens*) and the threatened species Johnson's seagrass (*Halophila johnsonii*). Seagrasses provide important ecological functions to estuarine and marine coastal systems. A wide range

of organisms are directly or indirectly dependent upon seagrasses for food and habitat (Zieman and Zieman1989), including several federally and state-listed endangered species such as green sea turtle and Florida manatee.

Seagrasses, coral, and hardbottom also provide essential fisheries habitat by creating a physically stable refuge and nursery ground for numerous commercially and recreationally viable fish and invertebrates (Zieman 1982, Phillips and Meñez 1988, Fonseca et al. 1988).

Artificial Reefs

Any dredged material that would be considered for disposal at an artificial reef site will need to meet appropriate criteria for artificial reef construction depending upon the proposed deployment location and material types. No silt, sand, clay (of any type), or rock boulders less than 150 pounds each will be allowed to be deployed in the artificial reef site. Ideally, the minimum acceptable weight of each individual piece of rock proposed for artificial reef deployment should weigh at least 500 pounds. Close coordination with the FWC Artificial Reef Program (Attn: Jon Dodrill, FWC-Division of Marine Fisheries Management) and Palm Beach County Artificial Reef Coordinator (Dr. Janet Phipps) will be required if artificial reefing is considered as a disposal option.

Peanut Island

Peanut Island contains a large habitat enhancement project that includes a 7.1-acre maritime hammock, 3 acres of mangroves, 1.5 acres of tidal channels and ponds, 3 acres of shallow-water lagoons and 1.3 acres of shallow-water reef. All of these habitat features provide habitat for a variety of wildlife including shorebirds, fish, crustaceans, and mollusks. Placing spoil on the island and widening the channel in segments C, D and E could adversely affect these habitats.

Resource Surveys

We recommend that multiple resource surveys be conducted as well as a review of historical data in order to evaluate the potential affects of this project on the wildlife and marine habitats that are present within the scope of the project. The draft Environmental Impact Statement should include the results of seagrass surveys within the project boundary areas of Lake Worth Lagoon and the inlet, as well as the results of surveys of hardbottom and coral surveys within the inlet channel and the inlet flares, with special attention paid to the finding of any staghorn coral. We offer our expertise and assistance in developing the protocols for the resource surveys due to their importance in the determination process of the feasibility of the options suggested in this scoping effort.

Summary

Expansion of the Lake Worth inlet channel and turning basin has the potential to adversely affect numerous wildlife and habitat resources of the state of Florida. Many difficult environmental hurdles would need to be overcome for the full extent of this project to come to fruition. We recommend that the USACE and the Port of Palm Beach give great consideration to the natural resources that would be affected